Preservice Elementary Teachers' Perceived Preparedness of High-Leverage Practices in Mathematics Teaching

Ji-Eun Lee (Oakland University)[†]

Gabriela Dumitrascu (Eastern Michigan University)

This study examined elementary pre-service teachers' (PSTs') perceived preparedness of high-leverage practices (HLPs) in mathematics teaching. Eighty-one elementary PSTs who enrolled in four sections of an elementary mathematics methods course at a Midwestern University in the United States participated in a survey that inquired their self-reported confidence and competence levels on HLPs. This study specifically investigated the comparison between PSTs' perceptions of HLPs and the mathematics teacher educators' expectations. Findings show several glaring differences between the PSTs' perceptions and experts' perceptions in regards to the complexity of some HLPs. This study suggests that initial teacher training programs should include more specific investment in PSTs' insights into details of each teaching practice in mathematics by deliberate decompositions.

I. Introduction

Without a doubt, how to effectively support pre-service teachers' (PSTs') professional preparation has been a key issue throughout history and across many contexts because it will eventually play a critical role in students' learning. While no definite consensus exists on what should be key elements in teacher education programs with many competing ideas, this study pays close attention to the shift towards the practice-focused training of new teachers. The recent recognition of the importance of the 'work of teaching,' which refers to "the core tasks that teachers must execute to help pupils learn" (Ball & Forzani, 2009, p. 497), suggests teacher preparation programs offer PSTs more explicit opportunities to engage in key teaching practices (Ball & Forzani, 2009; Grossman, et al., 2009; Lampert, 2009; Lampert & Graziani, 2009; NCTM, 2014). The attention to the work of teaching supports the shift from emphasizing "knowing about teaching" to "enacting the work of teaching during professional teacher training." To support this shift, many educators have discussed what could be the "high-leverage practices" (HLPs), which are considered to be the basic fundamentals of teaching (Ball, Sleep, Boerst & Bass, 2009; Davis & Boerst, 2014). As this critical shift in teacher preparation programs takes place, it is essential to assess PSTs' current understanding of HLPs and develop activities that promote PSTs' use of HLPs. To do so, teacher educators should first understand how PSTs perceive HLPs; however, research regarding these perceptions is limited. In response to the need for more investigation of PSTs' own perceptions, this study intends to accomplish two specific objectives: (a) identifying PSTs' perceived preparedness for specific HLPs in mathematics and (b) comparing between PSTs' perceived preparedness and the experts' (mathematics teacher educators') expected learning progressions. Ultimately, this study aims to gather information on

PSTs' conceptions of HLPs and provide insight into how to best support the development of practice-based teacher preparation programs.

II. Literature Review

1. High-leverage Practices

Teaching is a complex practice. Although there is widespread interest in practice-based teacher training, it is challenging to select a set of teaching practices considering the highly multifaceted work of teaching. There have been continuous efforts towards developing a common set of indicators for the disposition, knowledge, and skill that are required for beginning teachers; however, it is still challenging to define what should be taught in teacher preparation programs across many institutions (Levine, 2006).

One of the recent movements in teacher education involves focusing on a set of high-leverage practices (HLPs) that support high-quality student learning. By viewing the work of teaching as an "unnatural" act that should be taught, it highlights the importance of doing and practicing teaching, rather than "teaching about teaching" (Ball et al., 2009; Grossman & McDonald, 2008). This involves the "decomposition" (Grossman et al., 2009) of complex teaching practices into small, teachable high "leverage" practices for novice teachers (Ball & Forzani, 2009; Hatch & Grossman, 2009). HLPs for new teachers "include tasks and activities that are essential for skillful beginning teachers to understand, take responsibility for, and be prepared to carry out in order to enact their core instructional responsibilities" (Ball & Forzani, 2009). More specifically, Appendix provides an example of a list of such HLPs developed by TeachingWorks (2017) at the University of Michigan. This study intends to identify PSTs' perceived preparedness. More detailed descriptions for each HLP can be found at

http://www.teachingworks.org/work-of-teaching /high-leverage-practices.

It is a reasonable concern that "there is a danger of narrowing the role of teachers to that of technicians who are able to implement a particular set of teaching strategies, but who do not develop the broad professional vision" (Zeichner, 2012, p. 379). Thus, the work of tightening the list of "core" or "high-leverage" teaching practices should be done by attending to developing teachers' adaptive expertise to be sure that it does not serve to de-professionalize teaching (Ball & Forzani, 2009; Hammerness, Darling-Hammond, & Bransford, 2005).

2. Research on Pre-service Teachers' Perceptions of Good Teaching Practices

Research directly addressing perceptions of good teaching held by PSTs is relatively scarce in comparison to what has been done with in-service teachers. Research on PSTs' perceptions of good teaching practices shows mixed results for various aspects of teaching. Having been students themselves for many years, PSTs may already developed perceptions of good teaching from the student perspective through years of observation, and these early-developed perceptions can prevent change and act as obstacles during teacher education programs (Murphy, Delli & Edwards, 2004).

A strand of studies reports that PSTs generally enter teacher education programs with a positive, but simplistic view of teaching (Whitebeck, 2000). Many of them also enter the program with high confidence in terms of their ability to perform well and that may be the display of "unrealistic optimism" (Weinstein, 1988). In addition, by the time PSTs are entering the education programs they have a "solidified" philosophy about teaching, which is very often the traditional approach in place of a more progressive teaching approach (Handal, 2003).

Some PSTs believe teaching to be easy and that teaching is about transmitting information (Feiman-Nemer et al., 1989). They also believe content knowledge and their ability to convey that knowledge to others is important in good teaching (e.g., Hollingsworth, 1989; Powell, 1992). Some believe that the majority of knowledge about teaching comes from trial and error experiences when they enter the classroom (e.g., Joram & Gabrielle, 1998). In contrast, other studies report that PSTs consider a 'teaching personality' more important than content or pedagogical knowledge. This view is in line with the popular myth that some people are "born teachers." Whitbeck (2000) posits that some PSTs enter teacher preparation programs to learn the "tricks of the trade," and others believe they are "born teachers."

There is a common agreement among researchers that beliefs regarding teaching and learning of mathematics act as a filter for the instructional decision taken by practicing teachers and they have a direct impact on students' learning outcomes (Handal, 2003). Out of these beliefs, the concept of self-efficacy was highlighted as a cognitive source for positive motivation and disposition for PSTs in that stronger perceived self-efficacy increases the effort of PSTs to persist on overcoming obstacles and learn more (Dicke et al., 2014; Fry, 2009; Jamil, Downer, & Pianata, 2012; Handal, 2003; Pajares, 1996).

Overall, previous research on PSTs' views of good teaching was primarily focused on entry-level PSTs by examining their beliefs, expectations, and perceptions that they bring to the teacher preparation program. It is expected that this study will extend previous research in this area by exploring perceptions of good mathematics teaching held by PSTs at various stages of teacher training programs.

III. Methods

Eighty-one elementary PSTs who enrolled in four sections of a mathematics methods course at a Midwestern university in the United States participated in the study. For most participants, this was one or two semesters prior to the culminating, semester-long, full-time student teaching experience in an actual classroom. At the beginning of the semester, PSTs had a chance to review the descriptions of 19 HLP as listed in Appendix (from teachingworks.org).

PSTs were asked to select five HLPs they felt they could perform confidently and competently as well as five HLPs they felt were unconfident or incompetent at the time of responding, specifically thinking of mathematics instruction. PSTs completed these two lists along with brief justifications. PSTs' responses were collected via an anonymous electronic survey tool outside of class time. The researchers only used the aggregated data, which do not contain any personally identifiable information, to identify general patterns in PSTs' perceptions.

The data were analyzed via two levels. The first level of analysis provided descriptive information in order to provide an overall picture of PSTs' perceived preparedness as reflected in their lists of HLPs. Frequencies are reported as percentages of respondents who select specific HLPs to express their self-reported confidence and competence. At the second level, A pair of mathematics teacher educators (i.e., two authors) clustered the HLPs into several categories. Then, they sorted the HLPs in each category by considering their expected learning progressions in teacher preparation programs, from basic or fundamental practices to more complicated practices that require scaffolded experiences as teachers. By comparing the expert interpretation to the perceptions that came from the PSTs in this study, our intentions were to deepen the analysis.

IV. Results

This section provides an overview of PSTs' responses and then examines three distinct clusters of HLPs by highlighting aspects that contrast PSTs' perceived level of preparedness and the researchers' expected learning progressions. The distribution of five confident/competent HLPs and five unconfident/incompetent HLPs responded to by all PSTs based on their perceived preparedness is illustrated in Appendix.

1. Overview of PSTs' Responses

The most frequently selected HLP, where PSTs perceived they were confident and competent, was Building Respectable Relationships with Students (81% of PSTs listed this as a confident HLP and 2% of PSTs listed it as an unconfident HLP). The most frequently selected HLP that PSTs reported they are not confident/competent was Selecting and Designing Formal Assessment and Student Learning (51% of PSTs responded that they were not confident and only 2% of PSTs reported that they felt confident with this HLP).

Two clusters that showed relatively lower frequencies in PSTs' self-perceived confidence/competence include planning-related HLPs (e.g., Setting Learning Goals for Students, Designing Single Lessons and Sequence of Lessons) and assessment-related HLPs (e.g., Checking Student Understanding During and at the Conclusion of Lessons, Selecting and Designing Formal Assessments of Student Learning, Interpreting the Results of Student Work Including Routine Assignments, Quizzes, Tests, Projects, and Standardized Assessments).

2. PSTs' Self-Perceived Readiness vs. Experts' Expected Learning Progressions

This section reports on three clusters of HLPs that showed distinct discrepancies between

mathematics teacher educators' expected learning progressions and PSTs' perceived level of readiness. These clusters include: (a) complexity of interactive structure, (b) subject-matter knowledge, and (c) knowledge of and relationship with students.

2.1. Complexity of Interactive Structure

This study clustered three HLPs together to view PSTs' perceived level of preparedness in facilitating varied interactions with students as well as creating a classroom climate that promotes such interactions: Leading a Group Discussion (LGD), Setting up and Managing Small Group Work (SGW), and Eliciting and Interpreting Individual Students' Thinking (EIIS). Experts' expected learning progression involved having PSTs gradually exposed to more complex and challenging situations, starting from working on eliciting individual students' thinking and managing small groups to the whole group discussion. Thus, it was expected that LGD is the most complex practice in this cluster, because it requires teachers to orchestrate a wide range of students' contributions simultaneously by probing and eliciting their thinking. However, unlike the experts' expected progressions, PSTs responded that they felt more prepared in LGD and SGW than EIIS (see [Table 1]).

[Table 1] Perceived Preparedness on Complexity of Interactive Structure (N=81)

	Listed as 5 most confident HLPs	Listed as 5 least confident HLPs
LGD	44 (54%)	12 (15%)
SGW	47 (58%)	7 (9%)
EIIS	12 (15%)	27 (33%)

PSTs' explanations of their choices were heavily based on their experiences in their teacher education program. For example, one PST stated, "I have had a lot of experience leading group discussion as well

as small group work during field placements." Another PST commented, "I am just afraid I will not be able to put myself in the students' shoes to see what exactly they were thinking… I have not had many opportunities to pose questions on the spot that can reveal students' thinking."

2.2. Subject-Matter Knowledge

Another cluster consisted of two HLPs that rely on teachers' subject-matter knowledge and their ability to identify common patterns of student thinking in subject knowledge. This cluster includes Explaining and Modeling Content, Practices, and Strategies (EM) and Diagnosing Particular Common Patterns of Student Thinking and Development in a Subject-Matter Domain (DST). Although experts believe these two HLPs should go hand-in-hand, DST can provide a nice segue into an effective way of explaining and modeling. This is effective because anticipating students' possible ways of thinking can help teachers to present explanations and models that are appropriate for the students. However, PSTs' responses showed different perceptions (see [Table 2]).

[Table 2] Perceived Preparedness on Identifying and Using Subject-Matter Knowledge (N=81)

	Listed as 5 most confident HLPs	Listed as 5 least confident HLPs
EM	18 (22%)	18 (22%)
DST	6 (7%)	44 (54%)

Both HLPs were not perceived as well-prepared practices by PSTs, showing a certain level of their struggle with subject-matter knowledge. In particular, DST was the most frequently mentioned unconfident HLP. The two following sample statements showed how PSTs felt about these HLPs: "I do not feel confident with these practices [EM and DST] because I am not a strong math

teacher yet." "I am not good at math."

Once again, PSTs' justifications were highly dependent on their prior experiences similar to the previous cluster of HLPs. An additional component of justifications in this cluster involved PSTs expecting the mastery of these HLPs to come with time. One PST states, "[for DST] I think I would need much more time in an actual classroom to become better at this. Anytime I have to 'diagnose' something, I get nervous that I will do something wrong."

2.3. Knowledge of and Relationship with Students

Experts examined several HLPs that rely on teachers' knowledge of and relationship with students: Building Respectful Relationships with students (BRR), Talking about a Student with Parents or other Caregivers (TSP), and Learning about Students' Cultural, Religious, Family, Intellectual, and Personal Experiences and Resources for Use in Instruction (LS). Experts expected that LS would provide a good foundation for accomplishing BRR and TSP. However, as shown in [Table 3], PSTs demonstrated predominantly perceived high confidence in BRR. It was the most frequently selected HLP as a confident practice among the 19 HLPs.

[Table 3] Perceived Preparedness on Knowledge of and Relationship with Students (N=81)

	Listed as 5 most confident HLPs	Listed as 5 least confident HLPs
BRR	66 (81%)	2 (2%)
TSP	23 (28%)	36 (44%)
LS	22 (27%)	19 (23%)

While PSTs' confidence on BRR was generally explained based on their experiences during their field experiences, many of them also tried to appeal to their characteristics as caring and passionate

persons to explain why they felt confident about BRR. For example, one PST stated, "I feel confident building relationships with students because I have such a strong passion for children and I enjoy spending time with them." Another PST stated, "I love children. That's why I want to be a teacher." In contrast to the predominant confident on BRR, LS was not frequently mentioned. Although there was not a high number of responses, a couple of PSTs expressed that this practice may not be positively related to BRR. One PST stated, "I find it awkward and I worry about being rude when I outright ask students their cultural background. I grew up being told never to step on anyone's toes, to not say things out loud." Another PST commented, "I do not feel confident yet to do so [LS], but I feel that I still can build a good relationship with my students regardless of their background."

V. Discussion and Implications

Mathematics teaching is complex and involves much more than answering mathematics problems correctly and quickly. Additionally, it is much more than simple coverage of mathematical content. It not only requires knowing mathematical content but also involves a vast array of other practices. In this regard, the 19 HLPs provide a new perspective on teacher preparation by decomposing the complex work of teaching (Ball & Forzani, 2009; Grossman et al., 2009). However, this study indicates that ambiguity of understanding still exists among PSTs on the meaning and constructs associated with each HLP. For example, the work of leading a group discussion requires multiple stages of work, including launch, orchestration, and conclusion. In each stage, teachers use particular discussion-leading practices. As shown in [Figure 1], for example, orchestration included multiple

practices such as eliciting student thinking, probing, orienting, and making contributions (Shaughnessy et al, 2016).

[Fig. 1] Decomposing the work of leading a whole class discussion (Shaughnessy et al, 2016)

The fact that the work of leading a group discussion involves multiple practices contrasts PSTs' high level of self-efficacy in leading a group discussion and low level of self-efficacy in eliciting and interpreting individual students' thinking. This result leaves a question regarding PSTs' conceptions of "leading discussion," which may rely significantly on their unexamined, naïve assumptions that may have been engrained over time.

A second example of a contrast between PSTs' perception about teaching and the authentic work of teaching is their strong self-efficacy of building respectful relationships with students (HLP10). Over 80% of PSTs were confident in their competency to apply this HLP. However, developing productive relationships with students requires a complexity of culturally relevant pedagogical skills: know students and their socio-cultural realities, understand trauma, build trust, listen without judgment, see teaching and learning as reciprocal, accommodate a measure of opposition, be willing to reveal your own vulnerability, find commonality, communicate comfort and validation (Howard, 2017).

The example above suggests there is a need for even further deliberate and detailed decomposition of each teaching practice. The practices with a low level of preparedness perceived by PSTs (e.g., Diagnosing Particular Common Patterns of Student Thinking and Development in a Subject-Matter,

Selecting and Designing Formal Assessments of Student Learning) also contain important implications for PST training. Further research is required to determine the decomposed parts of each HLP and ways to sequence them to establish contextually relevant and responsive teacher preparation programs.

The results from this study are based on PSTs' perceived preparedness on HLPs, which do not necessarily represent their actual competencies on HLPs. Regardless of this limitation; however, the data spoke to the challenges in mathematics teacher education. In particular, the highlighted discrepancies between mathematics teacher educators' and PSTs' perceptions on HLPs suggest the need for ways to best support PSTs' learning in mathematics teacher preparation.

References

Ball, D. L., & Forzani, F. M. (2009). The work of teaching and the challenge for teacher education. *Journal of Teacher Education,* **60(5)**, 497 - 511.

Ball, D. L., Sleep, L., Boerst, T., & Bass, H. (2009). Combining the development of practice and the practice of development in teacher education. *Elementary School Journal,* **109(5)**, 458 - 474.

Davis, E. A., & Boerst, T. (2014). *Designing eleme ntary teacher education to prepare well-started beginners.* TeachingWorks Working Papers. Tea chingWorks: University of Michigan. Available: h ttp://www.teachingworks.org/research-data/worki ngpapers

Dicke, T., Parker, P. D., Marsh, H. W., Kunter, M., Schmeck, A., & Leutner, D. (2014). Self-efficacy in classroom management, classroom disturbances, and emotional exhaustion: A moderated mediation analysis of teacher candidates. *Journal of Educational Psychology,* **106(2)**, 569 - 583.

Feiman-Nemser, S., McDiarmid, G.W., Melnick, S.L. & Parker, M. (1989). *Changing beginning teachers' conceptions: a description of an introductory teacher education course.* East Lansing, MI: National Centre for Research in Teacher Education, Michigan State University.

Fry, S. W. (2009). Characteristics and experiences that contribute to novice elementary teachers' success and efficacy. *Teacher Education Quarterly,* **36(2)**, 95 - 110.

Grossman, P., Compton, C., Igra, D., Ronfeldt, M., Shahan, E., & Williamson, P. (2009). Teaching practice: A cross-professional perspective. *Teachers College Record,* **111(9)**, 2055 - 2100.

Grossman, P., & McDonald, M. (2008). Back to the future: Directions for research in teaching and teacher education. *American Educational Research Journal, 45,* 184 - 205.

Hammerness, K., Darling-Hammond, L., & Bransford, J. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 358 - 389). San Francisco: Jossey-Bass.

Handal, B. (2003). Teachers' mathematical beliefs: A review. *The Mathematics Educator,* **13(2)**, 47 - 57.

Hatch, T., & Grossman, P. (2009). Learning to look beyond the boundaries of representation: Using technology to examine teaching (Overview for a digital exhibition: Learning from the practice of teaching). *Journal of Teacher Education,* **60(1)**, 70 - 85.

Hollingsworth, S. (1989). Prior beliefs and cognitive change in learning to teach. *American Educational Research Journal,* **26(2)**, 160 - 189.

Howard, T. C. (2017). *TeachingWorks: High-levera ge practices.* University of Michigan. Retrieved f rom: http://www.teachingworks.org/images/files/ Dr._Tyrone_Howard_January_Seminar.pdf

Jamil, F. M., Downer, J. T., & Pianta, R. C. (2012).

Association of pre-service teachers' performance, personality, and beliefs with teacher self-efficacy at program completion. *Teacher Education Quarterly,* **39(4)**, 119 - 138.

Joram, E. & Gabriele, A. (1998). Preservice teacher's prior beliefs: Transforming obstacles into opportunities. *Teaching and Teacher Education,* **14(2)**, 175 - 191.

Lampert, M. (2009). Learning Teaching in, from, and for Practice: What Do We Mean? *Journal of Teacher Education,* **61(1-2)**, 21 - 34.

Lampert, M., & Graziani, F. (2009). Instructional activities as a tool for teachers' and teacher educators' learning. *Elementary School Journal,* **109(5)**, 491 - 509.

Levine, A. (2006, September). *Educating school teachers: The education schools project.* Retrieved from http://www.edschools. org/pdf/Educating_Tea chers_Report.pdf

Murphy, P.K., Delli, L.A.M. & Edwards, M.N. (2004). The good teacher and good teaching: comparing beliefs of second-grade students, preservice teachers, and inservice teachers. *The Journal of Experimental Education,* **72(2)**, 69 - 92.

National Council of Teachers of Mathematics (2014). *Principles to actions: Ensuring mathematical success for all.* Reston, VA: Author.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of educational research,* **66(4)**, 543-578.

Powell, R. R. (1992). The influence of prior experience on pedagogical constructs of traditional and nontraditional preservice teachers. *Teaching and Teacher Education,* **5(3)**, 225-238.

Shaughnessy, M., Garcia, M., Selling, S.K., O'Neill, M. K., Salazar, S. B., Wilkes, C., Willis, A., Ball, D. L. (2016). *Assessing novices' skills in leading mathematics discussions.* [PowerPoint slides]. Retrieved from http://www.teachingworks.org/image

s/files/AERA_2016_Beginning_Mathematics_Teach ing_Presentation_Shareable.pdf

TeachingWorks (2017). *TeachingWorks: High-lever age practices.* University of Michigan. Retrieved from: http://www.teachingworks.org/work-of-teac hing/high-leverage-practices.

Weinstein, C. (1988). Preservice teachers' expectations about the first year of teaching. *Teaching and Teacher Education,* **4(1)**, 31 - 40.

Whitbeck, D.A. (2000). Born to be a teacher: What am I doing in a college of education? *Journal of Research in Childhood Education,* **15(1)**, 129 - 136.

Zeichner, K. (2012). The Turn Once Again Toward Practice-Based Teacher Education. *Journal of Teacher Education,* **63(5)**, 376 - 382.

수학교수 관행에 대하여 예비교사들이 자각하는 준비도

Ji-Eun Lee[†]

Oakland University, USA

lee2345@oakland.edu

Gabriela Dumitrascu

Eastern Michigan University, USA

gdumitra@emich.edu

본 연구는 수학교수에서 중요도가 높은 관행들(High-leverage Teaching Practices [HLPs])에 대해 예비교사들이 스스로 자각하고 있는 준비도를 조사하였다. 미국 중서부에 위치한 대학에서 수학교육방법론을 수강하고 있는 81명의 예비초등교사들이 HLPs에 대한 자신감 및 능력에 대한 자가응답을 요하는 설문조사에 참여하였다. 특히 이 연구는 예비교사들이 자각하고 있는 HLPs에 대한 준비도와 수학교사교육자들이 예측하고 있는 교사교육 진행과정에 대한 비교 연구를 하였다. 연구 결과는 예비교사들과 수학교사교육자들이 HLPs의 복잡성에 대해 상당히 다른 견해를 보이고 있음을 제시하고 있다. 본 연구는 교사교육 프로그램들이 각각의 수학교수관행을 세분화하여 고찰할 수 있는 구체적인 기회를 예비교사들에게 제공할 것을 제안한다.
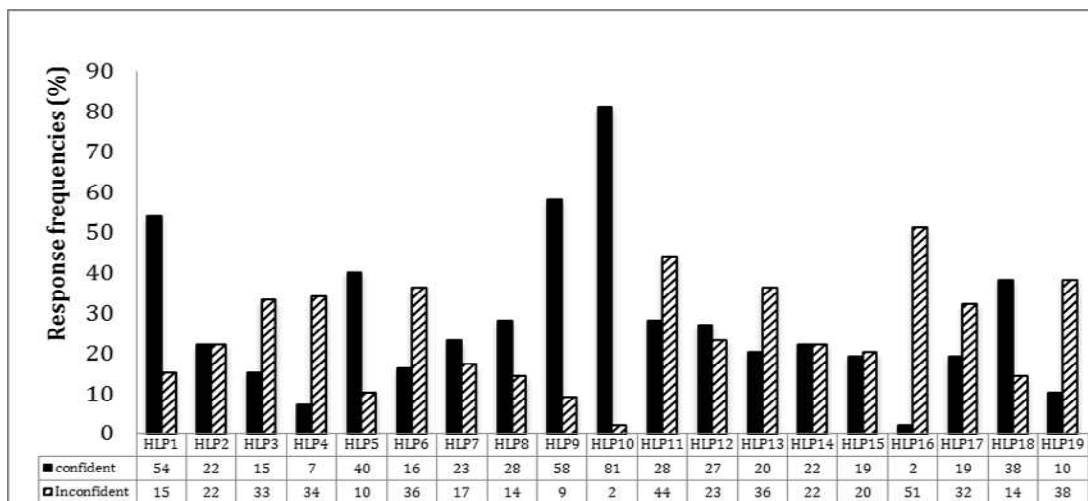
Appendix

List of High-Leverage Practices (Teaching Works, 2017) and PSTs' Responses on Self-perceived Preparedness

1. Leading a group discussion
2. Explaining and modeling content, practices, and strategies
3. Eliciting and interpreting individual students' thinking
4. Diagnosing particular common patterns of student thinking and development in a subject-matter domain
5. Implementing norms and routines for classroom discourse and work
6. Coordinating and adjusting instruction during a lesson
7. Specifying and reinforcing productive student behavior
8. Implementing organizational routines
9. Setting up and managing small group work
10. Building respectful relationships with students
11. Talking about a student with parents or other caregivers
12. Learning about students' cultural, religious, family, intellectual, and personal experiences and resources for use in instruction
13. Setting long- and short-term learning goals for students
14. Designing single lessons and sequences of lessons
15. Checking student understanding during and at the conclusion of lessons
16. Selecting and designing formal assessments of student learning
17. Interpreting the results of student work, including routine assignments, quizzes, tests, projects, and standardized assessments
18. Providing oral and written feedback to students
19. Analyzing instruction for the purpose of improving it

	HLP1	HLP2	HLP3	HLP4	HLP5	HLP6	HLP7	HLP8	HLP9	HLP10	HLP11	HLP12	HLP13	HLP14	HLP15	HLP16	HLP17	HLP18	HLP19
■ confident	54	22	15	7	40	16	23	28	58	81	28	27	20	22	19	2	19	38	10
◻ Inconfident	15	22	33	34	10	36	17	14	9	2	44	23	36	22	20	51	32	14	38

[Fig. 2] Frequencies of PSTs' Responses on Self-perceived Preparedness